

CLAIMS

1. A method for selecting access network (120; 420) for a mobile multi-access terminal (110; 210; 310; 410) in an Internet Protocol (IP)-based communication system (100; 200; 300; 400), comprising the steps of
 - 5 requesting, at a network-based access selection unit (261; 361; 461; 561), database information from a network-based profile server (262; 362; 462; 562) associated with a plurality of databases (263; 363; 463);
 - 10 transmitting the database information from the profile server to the access selection unit;
 - selecting, at the access selection unit, a current best access network for the mobile terminal based on the database information; and
 - 15 communicating an access network recommendation comprising an indication of the current best access network from the access selection unit to an access agent (213; 313; 413; 513) in the mobile terminal.
 2. The method of claim 1, further comprising the step of receiving, at the access selection unit (261; 361; 461; 561), terminal-specific information from the access agent (213; 313; 413; 513), the terminal-specific information being
 - 20 used for selecting the current best access network in the selecting step.
 3. The method of claim 1, wherein the selecting step involves executing an access selection algorithm based on predefined prioritization criteria.
 - 25 4. The method of claim 1, further comprising the steps of
 - forwarding the access network recommendation from the access agent (213; 313; 413; 513) to an access manager (214; 314; 414) in the mobile terminal (110; 210; 310; 410); and
 - 30 determining, at the access manager, which access network (120; 420) to use based on the access network recommendation and input user preferences and/or priority information in the mobile terminal.

5. The method of claim 1, further comprising the steps of
collecting, at the profile server (262; 362; 462; 562), the database
information from at least a subset of its associated databases (263; 363;
463); and
5 adapting, at the profile server, at least some of the database information
such that it can be read by the access selection unit (261; 361; 461; 561).
10. 6. The method of claim 1, wherein the database information comprises
information related to an item selected from the group of: access network,
user device, end user and operator.
15. 7. The method of claim 2, wherein the terminal-specific information
comprises information related to an item selected from the group of:
available access networks, currently used applications, location, speed,
direction and route.
20. 8. The method of claim 1, wherein the mobile terminal (110; 210; 310; 410)
resides in a vehicle (418; 618) and the terminal-specific information from the
access agent (213; 313; 413; 513) comprises measurements from a device
selected from the group of: a Global Positioning System (GPS) device, a route
sensor and a velocity sensor.
25. 9. The method of claim 1, further comprising the steps of
predicting, at the access selection unit (261; 361; 461; 561), a future best
access network for the mobile terminal (110; 210; 310; 410) based on the
database information from the profile server (262; 362; 462; 562); and
communicating the future best access network prediction from the access
selection unit to the access agent (213; 313; 413; 513).
30. 10. The method of claim 2, wherein the terminal-specific information
comprises an indication of a current terminal route, further comprising the
steps of

determining, at the access selection unit (261; 361; 461; 561), which access networks (120; 420) that will be possible access candidates after a predetermined period of time; and

suggesting, from the access selection unit, if there is no access candidate
5 for at least a portion of the current terminal route, an alternative terminal route to the access agent (213; 313; 413; 513).

11. The method of claim 1, wherein the access selection unit (261; 361; 461; 561) and the profile server (262; 362; 462; 562) are parts of an overall service network (260; 360; 460) for services related to mobility, security and access handling.

12. The method of claim 11, wherein the service network (260; 360; 460) further comprises a security server unit (264; 364; 464) to which the profile server (262; 362; 462; 562) transfers database information for authentication, authorization and accounting purposes.

13. The method of claim 11, further comprising the steps of
sending a triggering message from the access selection unit (261; 361;
20 461; 561) to a security server unit (264; 364; 464) in the service network (260; 360; 460) when the mobile terminal (110; 210; 310; 410) is about to change from a first to a second access network; and

transferring, via the security server unit, security information between security domains associated with the first and second access networks in
25 response to the triggering message.

14. The method of claim 1, further comprising the steps of
sending terminal-related database information from the profile server (262; 362; 462; 562) to an application server (366) in the service network (260; 360; 460); and

adapting, at the application server, an application (317) for the mobile terminal (110; 210; 310; 410) based on the terminal-related database information.

15. A network-based server device (261; 361; 461; 561) in an IP-based communication system (100; 200; 300; 400) with means for selecting access network (120; 420) for a mobile terminal (110; 210; 310; 410), comprising
 - 5 means for requesting database information from a network-based profile server (262; 362; 462; 562) associated with a plurality of databases (263; 363; 463);
 - means for receiving the database information from the profile server;
 - means for selecting a current best access network for the mobile terminal
 - 10 based on the database information; and
 - means for communicating an access network recommendation comprising an indication of the current best access network to the mobile terminal.
16. The device of claim 15, further comprising means for receiving terminal-specific information from the mobile terminal and means for using the terminal-specific information for selecting the current best access network in the selecting step.
17. The device of claim 15, wherein the means for selecting comprises
 - 20 means for executing an access selection algorithm based on predefined prioritization criteria.
18. The device of claim 15, further comprising
 - 25 means for predicting a future best access network for the mobile terminal (110; 210; 310; 410) based on the database information from the profile server (262; 362; 462; 562); and
 - means for communicating the future best access network prediction to the mobile terminal.
- 30 19. The device of claim 16 further comprising
 - means for determining which access networks (120; 420) that will be possible access candidates after a predetermined period of time; and

means for suggesting, if there is no access candidate for at least a portion of the current terminal route, an alternative terminal route to the mobile terminal.

5 20. The device of claim 15, belonging to an overall service network (260; 360; 460) for services related to mobility, security and access handling.

21. The device of claim 20, further comprising means for sending a triggering message to a security server unit (264; 364; 464) in the service network (260; 360; 460) when the mobile terminal (110; 210; 310; 410) is about to change from a first to a second access network, whereby security information is transferred between security domains associated with the first and second access networks via the security server unit in response to the triggering message.

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22. An IP-based communication system (100; 200; 300; 400) with means for selecting access network (120; 420) for a mobile multi-access terminal (110; 210; 310; 410), comprising

means for requesting, at a network-based access selection unit (261; 361; 461; 561), database information from a network-based profile server (262; 362; 462; 562) associated with a plurality of databases (263; 363; 463);

means for transmitting the database information from the profile server to the access selection unit;

means for selecting, at the access selection unit, a current best access network for the mobile terminal based on the database information; and

means for communicating an access network recommendation comprising an indication of the current best access network from the access selection unit to an access agent (213; 313; 413; 513) in the mobile terminal.

30 23. The system of claim 22, further comprising means for transmitting terminal-specific information from the access agent (213; 313; 413; 513) to the access selection unit (261; 361; 461; 561), the terminal-specific

information being used for selecting the current best access network in the selecting step.

24. The system of claim 22, wherein the profile server (262; 362; 462; 562),
5 provides a unified interface towards its associated databases (263; 363; 463).

25. The system of claim 22, wherein the access selection unit (261; 361;
461; 561) and the profile server (262; 362; 462; 562) are parts of an overall
service network (260; 360; 460) for services related to mobility, security and
10 access handling.

26. The system of claim 25, wherein the service network (260; 360; 460)
further comprises a security server unit (264; 364; 464) with means for
communicating with the profile server (262; 362; 462; 562) for
15 authentication, authorization and accounting purposes.

27. The system of claim 22, further comprising
means for sending terminal-related database information from the
profile server (262; 362; 462; 562) to an application server (366) in the
20 service network (260; 360; 460); and
means for adapting, at the application server, an application (317) for
the mobile terminal (110; 210; 310; 410) based on the terminal-related
database information.

25 28. A mobile terminal (110; 210; 310; 410) associated with at least two
access possibilities in an IP-based communication system (100; 200; 300;
400) with means for selecting access network (120; 420) for the mobile
terminal, comprising

30 means for transmitting terminal-specific information from an access
agent (213; 313; 413; 513) in the mobile terminal to a unit for access selection
(261; 361; 461; 561) in the network;

means for receiving, at the access agent, an access network recommendation comprising an indication of the current best access network from the access selection unit; and

5 means for forwarding the access network recommendation from the access agent to an access manager (214; 314; 414) in the mobile terminal.

29. The mobile terminal of claim 28, further comprising

means for determining, at the access manager (214; 314; 414), which access network (120; 420) to use based on the access network recommendation and input user preferences and/or priority information in the mobile terminal.
